

WHAT IS CLAIMED IS:

1. A relay lens comprising:
a first lens group having a plurality of lenses;
an aperture stop;
a second lens group having one lens;
a fold mirror; and
a third lens group having one lens.
2. The relay lens of claim 1, wherein the first lens group comprises three lenses.
3. The relay lens of claim 1, wherein the first lens group comprises a meniscus lens.
4. The relay lens of claim 1, wherein the first lens group comprises an aspherical lens.
5. The relay lens of claim 1, wherein the one lens in the second lens group comprises one aspherical surface.
6. The relay lens of claim 1, wherein the one lens in the second lens group comprises one convex surface.
7. The relay lens of claim 1, wherein the one lens in the third lens group comprises two spherical surfaces.
8. The relay lens of claim 1, wherein the second lens group comprises a second lens.
9. The relay lens of claim 8, wherein the second lens group comprises a third lens.

10. The relay lens of claim 1, wherein:
the first lens group forms a front part of the relay lens;
the second lens group forms an intermediate part of the relay lens; and
the third lens group forms a field part of the relay lens.
11. The relay lens of claim 1, wherein:
the second lens group includes a second lens.
12. The relay lens of claim 11, wherein the lens and the second lens each have an aspheric surface.
13. The relay lens of claim 1, wherein:
the second lens group includes second and third lenses.
14. The relay lens of claim 13, wherein at least two lenses in the second lens group have at least one aspheric surface.

15. The relay lens of claim 1, wherein the relay lens is constructed according to the following data:

Surface #	Surface Type	Y Radius	Thickness	Glass	Refract Mode	Y Semi-Aperture
Object	Sphere	Infinity	40.5759		Refract	0
1	Sphere	-38.8954	48.5861	CaF2	Refract	34.3792
2	Sphere	-70.4454	1.0000		Refract	64.7896
3	Asphere	1056.8762	55.0000	CaF2	Refract	103.1220
4	Sphere	-175.1412	1.0000		Refract	108.0828
5	Sphere	336.3331	37.7241	CaF2	Refract	120.1833
6	Asphere	-840.2127	13.6072		Refract	119.9937
7	Sphere	Infinity	84.3426		Refract	119.5076
8	Sphere	Infinity	133.4129		Refract	117.1521
Stop	Sphere	Infinity	55.9768		Refract	113.4723
10	Sphere	1784.7806	35.1455	CaF2	Refract	122.2680
11	Asphere	-339.0580	93.6409		Refract	123.0736
12	Sphere	Infinity	310.7213		Refract	119.7255
13	Sphere	Infinity	85.0612		Refract	110.6886
14	Sphere	417.5797	31.2151	CaF2	Refract	107.8689
15	Sphere	-1616.3317	224.6563		Refract	106.3382
16	Sphere	Infinity	28.3500	CaF2	Refract	56.8430
17	Sphere	Infinity	0.0000		Refract	53.0694
Image	Sphere	Infinity	0.0000	Air	Refract	53.0694

16. A lithography system, comprising:
a light source;
a reticle; and
a relay lens positioned between the light source and the reticle,
the relay lens including,
a first lens group has a plurality of lenses;
an aperture stop;
a second lens group has one lens;
a fold mirror; and
a third lens group has one lens.

17. The lithography system of claim 16, wherein the relay lens is constructed according to the following data:

Surface #	Surface Type	Y Radius	Thickness	Glass	Refract Mode	Y Semi-Aperture
Object	Sphere	Infinity	40.5759		Refract	0
1	Sphere	-38.8954	48.5861	CaF2	Refract	34.3792
2	Sphere	-70.4454	1.0000		Refract	64.7896
3	Asphere	1056.8762	55.0000	CaF2	Refract	103.1220
4	Sphere	-175.1412	1.0000		Refract	108.0828
5	Sphere	336.3331	37.7241	CaF2	Refract	120.1833
6	Asphere	-840.2127	13.6072		Refract	119.9937
7	Sphere	Infinity	84.3426		Refract	119.5076
8	Sphere	Infinity	133.4129		Refract	117.1521
Stop	Sphere	Infinity	55.9768		Refract	113.4723
10	Sphere	1784.7806	35.1455	CaF2	Refract	122.2680
11	Asphere	-339.0580	93.6409		Refract	123.0736
12	Sphere	Infinity	310.7213		Refract	119.7255
13	Sphere	Infinity	85.0612		Refract	110.6886
14	Sphere	417.5797	31.2151	CaF2	Refract	107.8689
15	Sphere	-1616.3317	224.6563		Refract	106.3382
16	Sphere	Infinity	28.3500	CaF2	Refract	56.8430
17	Sphere	Infinity	0.0000		Refract	53.0694
Image	Sphere	Infinity	0.0000	Air	Refract	53.0694